

**STATE OF IOWA  
DEPARTMENT OF COMMERCE  
IOWA UTILITIES BOARD**

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IN RE:	)	
ITC MIDWEST LLC	)	DOCKET NO. E-22386
DAIRYLAND POWER COOPERATIVE	)	

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**INTERVENOR CHRIS KLOPP'S REPLY**

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**I. INTRODUCTION**

**Q.** Please state your name, address, educational background, and occupation.

**A.** My name is Chris Klopp. I live at 4283 County Road P, Cross Plains, Wisconsin 53528, with my mother (as her care giver). I am not employed because of long-term disability (for back pain) from the State of Wisconsin Department of Natural Resources, my last employer. My educational background is in science. I have a BS in Chemistry from the University of Wisconsin – Madison.

**Q.** On whose behalf are you testifying?

**A.** I am testifying on behalf of myself, in opposition to the Petitioners filing for franchise to erect, maintain, and operate an electric transmission line in Dubuque and Clayton counties in Iowa, beginning at the Hickory Creek Substation (and ultimately connecting to the Cardinal Substation in Middleton, Wisconsin), Docket No. E-22386, filed by ITC Midwest LLC and Dairyland Power Cooperative (jointly Petitioners) with the Iowa Utilities Board (IUB).

**Q.** What is Ms. Klopp's interest in this proceeding?

**A.** Ms. Klopp has the following interests in the Petitioners filing for franchise to erect, maintain, and operate an electric transmission line, as described above (herein referred to as "the project" or "CHC"):

- As a ratepayer in the Wisconsin and the MISO footprint, Ms. Klopp would assume a portion of the costs associated with building, financing, operating, maintaining and providing security for the proposed high capacity expansion transmission facility over a period of 30-50 years. Ms. Klopp is concerned about potential electric rate increases to ratepayers.
- Ms. Klopp is concerned that the project would have adverse economic impacts on communities along its' path, including but not limited to: reduction in tourism; causing property value losses and associated reductions in tax base and school district levies.

- 1 • The view-scape of Ms. Klopps' property would be adversely effected, therefore she has a  
2 strong and unique personal interest in this proceeding.  
3
- 4 • Ms. Klopp questions the ability of the project to significantly reduce carbon dioxide  
5 (CO2) emissions. Ms. Klopp has an interest in alternative methods of CO2 reduction  
6 such as employing energy efficiency (EE), distributed residential, commercial and  
7 community renewable electric generation (DE), load management also known as demand  
8 response (DR) and Non-Transmission Alternatives (NTA's) which can meet the goals of  
9 the project in an environmentally favorable way. Ms. Klopp believes a thorough  
10 assessment of alternatives is necessary to assure the public that the best possible choice  
11 for their energy future is being made. Ms. Klopp has concerns that High Voltage  
12 Transmission Line (HVTL) projects creating undue utility debt and stranded assets  
13 threaten the ability of state funding for "Focus on Energy" programs (FoE) that make  
14 these alternative methods feasible through incentives.  
15
- 16 • Ms. Klopp is concerned that the project would have significant detrimental impacts to the  
17 environment in both Iowa and Wisconsin, including the Driftless Area in Wisconsin, an  
18 area known for its beauty, unique geology, habitat and history.  
19
- 20 • Ms. Klopp has concerns about potential human and animal health risks associated with  
21 proximity to HVTLs' and aspects of Right of Way (ROW) management.  
22

23 **Q.** What topics do you wish to discuss in your reply testimony?

24 **A.** I wish to discuss the following:  
25

- 26 • Representation of Public Interest
- 27 • Analysis of the Projects Economic Viability
- 28 • Analysis of Environmental Aspects of the Proposal
- 29 • Analysis of the Proposal's Reliability Claims
- 30 • Analysis of Alternatives  
31

**Q.** Do you have any exhibits to offer in support of your reply testimony?

**A.** Yes. Listed by individual exhibits, separate from bundling:

## EXHIBITS

Klopp-Reply-Exhibit-1	Klopp-Reply-Exhibit-97
Klopp-Reply-Exhibit-2	Klopp-Reply-Exhibit-116
Klopp-Reply-Exhibit-5	Klopp-Reply-Exhibit-117
Klopp-Reply-Exhibit-6	Klopp-Reply-Exhibit-125
Klopp-Reply-Exhibit-7	Klopp-Reply-Exhibit-126
Klopp-Reply-Exhibit-8	Klopp-Reply-Exhibit-134
Klopp-Reply-Exhibit-9	Klopp-Reply-Exhibit-136
Klopp-Reply-Exhibit-10	Klopp-Reply-Exhibit-139
Klopp-Reply-Exhibit-11	Klopp-Reply-Exhibit-145
Klopp-Reply-Exhibit-12	Klopp-Reply-Exhibit-148
Klopp-Reply-Exhibit-13	Klopp-Reply-Exhibit-149
Klopp-Reply-Exhibit-14	Klopp-Reply-Exhibit-150
Klopp-Reply-Exhibit-15	Klopp-Reply-Exhibit-151
Klopp-Reply-Exhibit-16	Klopp-Reply-Exhibit-152
Klopp-Reply-Exhibit-17	Klopp-Reply-Exhibit-153
Klopp-Reply-Exhibit-18	Klopp-Reply-Exhibit-154
Klopp-Reply-Exhibit-20	Klopp-Reply-Exhibit-155
Klopp-Reply-Exhibit-21	Klopp-Reply-Exhibit-156
Klopp-Reply-Exhibit-22	Klopp-Reply-Exhibit-157
Klopp-Reply-Exhibit-23	Klopp-Reply-Exhibit-158
Klopp-Reply-Exhibit-88	Klopp-Reply-Exhibit-159
Klopp-Reply-Exhibit-94	Klopp-Reply-Exhibit-160
Klopp-Reply-Exhibit-95	Klopp-Reply-Exhibit-161

1    **II.    REPRESENTATION OF PUBLIC INTEREST**

2  
3    **Q.    What Are Some Underlying Public Interests in this Case?**

4    **A.**    Iowa Code 2019 Section § 478.3(2) (a) states that the Petitioner is required to set forth  
5    "an allegation that the proposed construction represents a reasonable relationship to an overall  
6    plan of transmitting electricity **in the public interest** ..." The project that is the subject of the  
7    Iowa Utility Board (IUB), docket E-22386, proposed by ITC Midwest and Dairyland Power  
8    Cooperative (the Petitioners) will have substantial impacts on:

- 9  
10            • Local community economics;  
11            • Electric rates for all Iowa ratepayers as well as ratepayers in the ten northern states  
12            under the umbrella of the Mid-continent Independent System Operators (MISO).  
13            • The ability of landowners to use and enjoy their property for the purposes of pleasure  
14            and business;  
15            • The quality of life of residents in the vicinity of the project;  
16            • Effective land use for agricultural purposes;  
17            • Property Values and Tourism;

18  
19    All of these impacts affect the Public Interest.

20  
21    The decision on whether to approve or deny this project will have a direct effect on Iowa's  
22    energy future. If this project is approved by the IUB, Iowa ratepayers will pay their share of the  
23    project including financing and maintenance costs of the project and a substantial profit margin  
24    (ROE incentive adder) afforded the Petitioners. Beyond Iowa, all ratepayers in the ten northern  
25    MISO states will be paying their respect shares of the project. Ratepayers will pay for the  
26    project and accept the long-term outcome of the project, whether it turns out to be a good choice  
27    for the future or a poor one. Ratepayers not only bear the cost, but the risk of the project.

28  
29    With the energy landscape changing more rapidly than at any time in the past due to the wider  
30    availability, plummeting cost and attractive savings of residential, commercial and community

1 solar and storage<sup>1</sup>, large utility investments of this kind have a strong potential to become  
2 stranded assets.<sup>2</sup> Increasing utility debt causes electric rates to soar<sup>3</sup>, weighing heavily on  
3 residential ratepayers as well as making the cost of doing business less competitive for Iowa  
4 commercial and industrial users.

5  
6 **Q. Is Fair Representation of Public Interest A Special Concern in This Case?**

7 **A.** Yes. State, County and Municipal elected officials are charged with protecting Public  
8 Interests. In an attempt to do just that, the Dubuque County Board and Iowa State  
9 Representative Charles Isenhardt posed reasonable questions on the Public's behalf to the  
10 Petitioners during a Dubuque County Board Meeting. Those questions went unanswered.

11 On August 13, 2018, The Dubuque County Board adopted Resolution #18-233<sup>4</sup> requesting the  
12 Petitioners provide additional information about the Project including estimates of electric bill  
13 impacts, a cost-benefit and CO2 reduction comparison with Non-Transmission Alternatives and  
14 to please do so in terms that Iowa ratepayers can fully understand. These parts read:

15  
16 ***“Dubuque County requests that the following information be part of the petition***  
17 ***for a franchise [Docket E-22386] to appropriately evaluate impact of the***  
18 ***proposed scope and goals of said petition and subsequent considerations.***

20 ***1. a) Dubuque County request 20-Year, estimated total cost for the high-voltage***  
21 ***transmission option that electric customers would pay. These 20-year cost should***  
22 ***itemize capital and other construction period costs; return on the investment;***  
23 ***financing costs; operation and maintenance costs; cost for securing the facility***  
24 ***against cyber or other physical attacks; and any other costs that are ultimately***  
25 ***paid by electric customers in sum.***

27 ***1. (b) Dubuque County requests clear, easy to read comparisons of average***  
28 ***residential commercial and industrial utility bills for 5, 10 and 20 years with and***

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1 1 Klopp-Reply-Exhibit 121,

2 2 Klopp-Reply-Exhibit-159 at p.2 See Also Denied Expansion Lines in Klopp-Reply-Exhibit-23

3 3 See Table on Page 14 of the Reply. For data, see Klopp-Reply-Exhibit-97

4 44 Klopp-Reply-Exhibit-15 Dubuque County Resolution

*without the proposed high-voltage transmission facility in-service.*

*1. (c) To assist in determination of need for a high-voltage transmission facility, Dubuque County request that the applicants provide a Non-Transmission Alternative in their petition based on accelerated spending in energy efficiency, load management and deployment of distributed solar generation utilizing the same, total amount ratepayers what assume over 40 years for the high-voltage transmission option including cost benefit analysis comparing monetary benefits and the impacts on CO2 reduction overtime.”*

During the Dubuque County Board Meeting discussion concerning the Resolution on August 13, 2018, Iowa State Representative Charles Isenhardt indicated that he would be requesting an additional informational meeting with representatives of ITC and MISO representatives to assist the County and Objectors learn more than what ITC representatives had provided at the Board meeting. On December 10, 2018. Representative Isenhardt met with ITC employee Todd Schulz to discuss setting up the additional informational meeting with representatives of ITC and MISO. The day following that meeting, Representative Isenhardt ‘s email to Mr. Schulz reads, in full:

*Todd,*  
*Thank you for the conversation yesterday.*  
*I understood you to say that ITC Midwest would not be inclined to join me in a request or support our request that representatives of MISO come to Dubuque for a public meeting to explain “multi-value projects” and how the Cardinal-Hickory line serves those values, to the net benefit of utility customers in Iowa and the infrastructure/natural resources of Iowa. Please let me know if I misunderstood or if anything changes. If something does develop, I will make sure to let you know.*  
*Respectfully submitted,*  
*Chuck Isenhardt State Representative, House District 100*

The Petitioner ITC’s, undated, written response to Representative Isenhardt’s email<sup>5</sup> makes ITC’s

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<sup>5</sup> Klopp-Reply-Exhibit 5

minimal regard for public interest evident. ITC's response makes no mention of Representative Isenhardt's repeated interest to set up an informational meeting with ITC and MISO. Instead, Mr. Schulz fails to acknowledge Representative Isenhardt's stated public interest to arrange an additional informational meeting and makes no mention of his request. His letter repeats text from the insufficient reply ITC sent the County three months prior.

In discovery, Intervenor Grice and Intervenor Klopp asked all the non-citizen parties in the case to provide examples of their public outreach efforts such as detailed information they distributed, public presentations about the CHC project, surveying and other ways of obtaining ratepayer feedback to inform into their participation. Consistent practices became apparent in their replies:

**Table 1. Non-Citizen Party CHC Project Public Outreach Efforts**

PARTY	A Has Organization Distributed CHC Project Economic or CO2 Impact Info To Ratepayers?	B Has the Organization Sought Ratepayer Feedback About the Project?	C Has the Organization Opposed a Transmission Line Proposal in Last 15 Years?	D Will the Organization Acknowledge Total Dollar Amounts Received from Utility Interests?
MISO <sup>6</sup>	No	No	N/A	N/A
ITC-MIDWEST <sup>7</sup>	No	No	N/A	N/A
DAIRYLAND <sup>8</sup>	No	No	N/A	N/A
MN ENVIRON.ADVOCACY <sup>9</sup>	No	No	No	No
CLEAN GRID ALLIANCE <sup>10</sup>	No	No	No	No
FRESH ENERGY <sup>11</sup>	No	No	No	No
IOWA ENVIRON COUNCIL <sup>12</sup>	No	No	No	No
OFFICE CONSUMER ADV <sup>13</sup>	No	No	Yes	From Ratepayers (\$) 475A.6.

<sup>6</sup> Klopp-Reply-Exhibit-1 Column A at p.26; Column B at p.29;

<sup>7</sup> Klopp-Reply-Exhibit-2 **Column A** at p.43 ITC materials (see Klopp-Reply-Exhibits 3, 4 & 5) do not provide CHC Project specific economic or CO2 impact information only estimates for all 17.5 MVP's; **Column B** at p.40;

<sup>8</sup> Klopp-Reply-Exhibit-13 **Column A** at p.115 materials ; **Column B** at p.112

<sup>9</sup> Klopp-Reply-Exhibit-8 **Column A** at p.3; **Column B** at p.4; **Column C** at p.4 and **Column D** at p.2.

<sup>10</sup> Klopp-Reply-Exhibit-9 **Column A** at p.3; (Attachments A&B do not provide CHC Project-specific economic or CO2 impact information only estimates for all 17.5 MVP's); **Column B** at p.4; **Column C** at p.5 and **Column D** at p.2.

<sup>11</sup> Klopp-Reply-Exhibit-10 **Column A** at p.3; **Column B** at p.4; **Column C** at p.4 and **Column D** at p.2.

<sup>12</sup> Klopp-Reply-Exhibit-11 **Column A** at p.4 (see Klopp-Reply-Exhibits 4,5, **Column B** at p.5; **Column C** at p.7; **Column D** at p.3;

<sup>13</sup> Klopp-Reply-Exhibit-12 **Column A** at p.2 ; **Column B** at p.3; **Column C** at p.9 and **Column D** at p.1.

**Q. Does the Petitioners' Reliance on MISO's Expansion Transmission Planning Process Consider Ratepayer Interests?**

A. No. When asked in discovery for information about ratepayer and Objector priorities as reflected in Dubuque's County questions, ITC-Midwest categorically sees no accountability to Iowa ratepayers.

- ITC-Midwest does not mention a cost for the CHC Project in its application materials. When asked to "provide the estimated, comprehensive, 40 year cost that just Iowa customers would assume for the CHC Project and a citation to support this estimate," ITC replies, "ITC Midwest further objects that the terms "comprehensive" and "customers" in this context are vague and ambiguous. For instance, MISO's "customers" are load serving entities; but the question appears to refer to end user retail electric customers. ITC Midwest further objects that there are numerous factors, including the tariffs and riders used by the retail electric provider that would impact the cost to end user retail customers. Notwithstanding and without waiving its objections, ITC Midwest states that it does not have end-user retail electric customers and does not have access to the information needed to estimate the impact of a particular transmission project on individual, end-use retail customers. ITC Midwest can state that the estimated cost allocated to Iowa would be approximately 8%. How costs or savings related to a particular project would be or have been passed on to individual retail electric customers can only be determined by individual electric utility companies that serve retail load.<sup>14</sup>

- When ITC-Midwest was asked for the estimated, comprehensive costs for all cost-shared MVP transmission lines for all MISO customers over 40 years, ITC Midwest responds that "that it does not have end user retail electric customers"<sup>15</sup>

- When asked about the actual economic performance of many lines in service<sup>16</sup>, MISO provided no financial assessment of existing MVP lines in service. Further, In Mr. Ellis' Exhibit 3, he states "The MTEP17 MVP Review is the first cycle to provide a quantitative and qualitative look at how the in-service MVPs may have impacted certain historical

<sup>14</sup> Klopp-Reply-Exhibit-2 Page 6 of 65

<sup>15</sup> Klopp-Reply-Exhibit - 2 Page 3-4 of 65

<sup>16</sup> Klopp-Reply-Exhibit-1 – page 9, Data Request 6C and 6D

market metrics. With only four of the 17 MVPs presently in service, no definitive conclusions could be made as a result of this analysis.”<sup>17</sup> Regarding the economic measure (energy cost savings) used to evaluate the CHC project in Wisconsin, MISO replied they don’t understand what “energy cost savings” are even though the term was used repeatedly throughout ATC/ITC’s joint Application material in Wisconsin.<sup>18</sup>

- When asked to calculate comparisons of average, residential commercial and industrial electric bills for specific years with the CHC project and without it, ITC Midwest replied that “ITC Midwest objects to the request because it does not have end-user retail electric customers and does not have access to the information needed to estimate the impact of a particular transmission project on individual, end-use retail customers.”<sup>19</sup>

- In response to Objector requests for cost-benefit analysis for the CHC Project and Non Transmission Alternatives, ITC defers to MISO, and replies that “MISO has completed multiple cost-benefit analyses for the MVP Portfolio overall and confirmed that the portfolio will provide benefits in excess of its costs.”<sup>20</sup>

ITC Witness Eddy ignores the project-specificity of the request and segues to irrelevant discussion of analysis that pertains only to all 17 projects, collectively, circumventing any discussion of the project before the IUB. Even those familiar with utility planning must remain on high alert for this technique throughout MISO’s MVP planning and ITC’s adoption of it in the proceeding.

The technique capitalizes on keen, ratepayer and public interest in accountable figures like dollars per month and numbers of tons of CO2 avoided. Numbers with dollar signs are a rarity in MISO planning so when substantive numbers are encountered, readers often attribute them to the topic they have in mind, Cardinal Hickory Creek, not a 17-18 MVP Portfolio of transmission lines.

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<sup>17</sup> MISO-Ellis-Direct-Exhibit 3- page 9

<sup>18</sup> Klopp-Reply-Exhibit -1 at Page 11

<sup>19</sup> Klopp-Reply-Exhibit - 2 Page 9-11

<sup>20</sup> ITC Midwest Eddy Direct Page 28 of 30

Fourteen of the MVP lines are now in operation<sup>21</sup> creating daily evidence of their actual performance. Given the nine year age of MISO's planning, its continued use of generalities, to the exclusion of existing concrete evidence (even when current data is being sought), seems to be an obfuscation of the issues and purpose of this proceeding.

ITC's failure to provide relevant economic and environmental evidence to the Iowa Public, ratepayers and the IUB for a project that will cost millions of dollars is unacceptable. It would appear that ITC believes that broad generalizations and sweeping conclusions without documented support, is adequate for the IUB to make a decision in the Public Interest.

**Q. Are Ratepayers and Landowners Taking on the Greatest Risks?**

**A. Yes.** Ratepayers and landowners stand to lose the most if this project was to be built. Their only gain is the protection of their properties, communities, livelihood and quality of life. Defending themselves from losses in property values<sup>22</sup> and reduced tourism from transmission line projects (that cause long-term harm to communities in their vicinity) is time consuming and stressful. There is no profit incentive to intervening as a citizen and ratepayer, only long hours of research and writing.

This is in stark contrast to that which the Petitioners and the Clean Energy Intervenors (CEI) stand to gain. The profit afforded the Petitioners at the public's expense is a windfall in comparison to what the private business can depend on. Private businesses must rely on good decision making with no guarantees. Those investing in large wind turbines, are similarly motivated by profit on projects whose initial investment is subsidized by the government. Even if this project were to be denied, the Petitioners have already secured their golden parachute from the Federal Energy Regulatory Commission (FERC)<sup>23</sup>, covering any costs they have incurred in designing, planning and promoting the project. This is a no risk pursuit for them. Given the financial incentives and the track record of lacking engagement with ratepayers (the parties who pay),<sup>24</sup> the Petitioners and their supporters cannot be expected to represent Public Interest in this

<sup>21</sup> Klopp-Reply-Exhibit-20

<sup>22</sup> Klopp-Reply-Exhibit-131

<sup>23</sup> Klopp-Reply-Exhibit-19

<sup>24</sup> See Table 1

1 proceeding.

2  
3 **Q. Is the Current Emphasis on Utility-Scale Spending in Iowa Adversely Affecting**  
4 **Ratepayers?**

5 **A.** Yes. The U.S. Energy Information Administration (EIA) and data through discovery  
6 indicates that Iowa is falling behind on traditional energy goals (increasing electric rates, usage  
7 decreasing at a slower pace than other states in the region), over the last 10 years as transmission  
8 expansion and wind power development has been increasing. Several negative trends are being  
9 established, at the same time that MISO planning, inclusive of both investment types, has  
10 suggested there would be net savings created. With plans for more transmission projects  
11 continuing to filter in to state agencies and wind investors proposing ever increasing numbers of  
12 new turbines, it is important for these trends to be seriously investigated.

13  
14 According to data collected by the EIA, retail electricity rates in Iowa have been increasing at a  
15 pace much faster than in surrounding states. From 2008 to 2018 the cost of electricity for retail  
16 customers has increased an average of \$35 per year, Table 3, below.

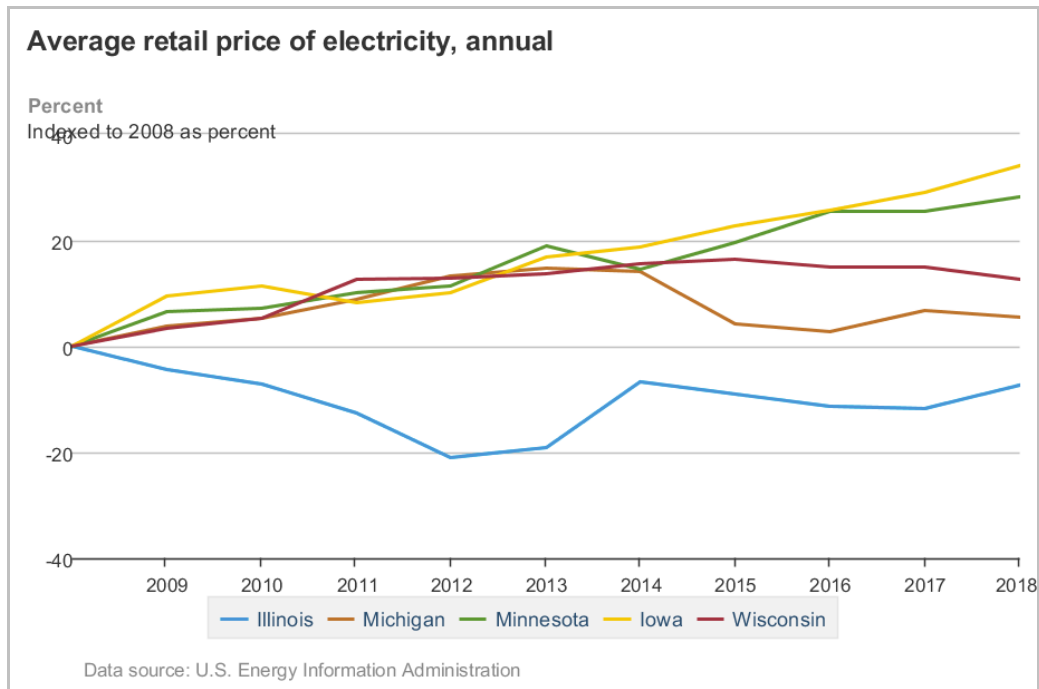
17  
18 The amount of power used by Iowa residential and commercial customers has remained fairly  
19 flat, but use by industry has increased at a much faster rate of 2.2% per year. Electricity usage by  
20 customers of Dairyland Power Cooperative (DPC) in recent years resembles that in Wisconsin,  
21 dropping at a mild rate of -0.44% per year.<sup>25</sup>

22  
23  
24  
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26 TABLE NEXT PAGE  
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32  
33

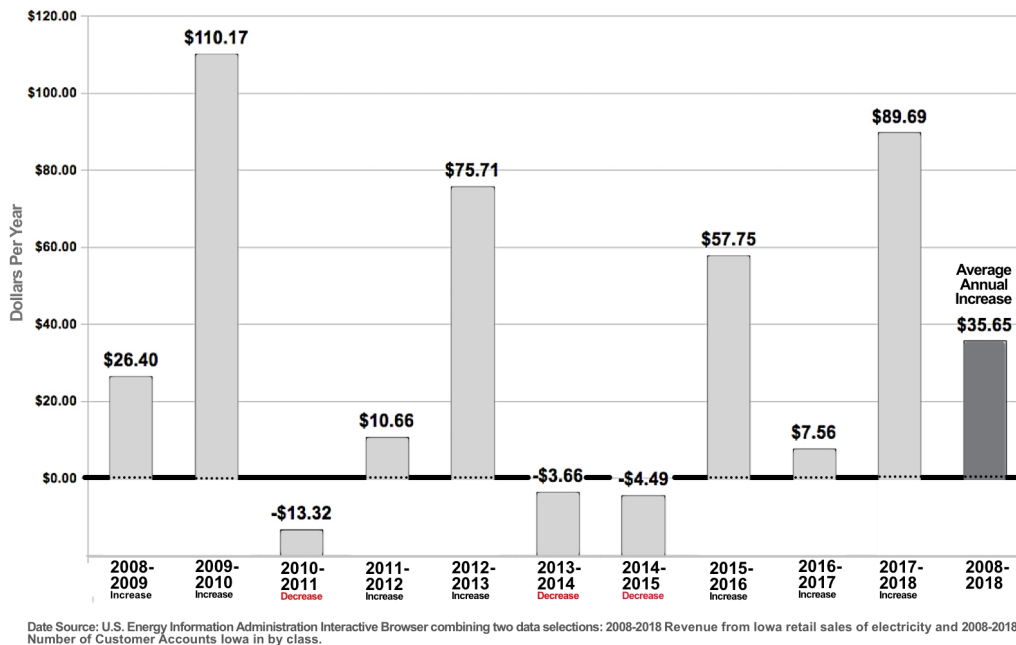
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1 <sup>25</sup> Klopp-Reply-Exhibit-13, page104

**TABLE 2. Comparison of Average Retail Price of Electricity in Iowa, Illinois, Michigan, Minnesota and Wisconsin, by percent, 2008 to 2018.<sup>26</sup>**



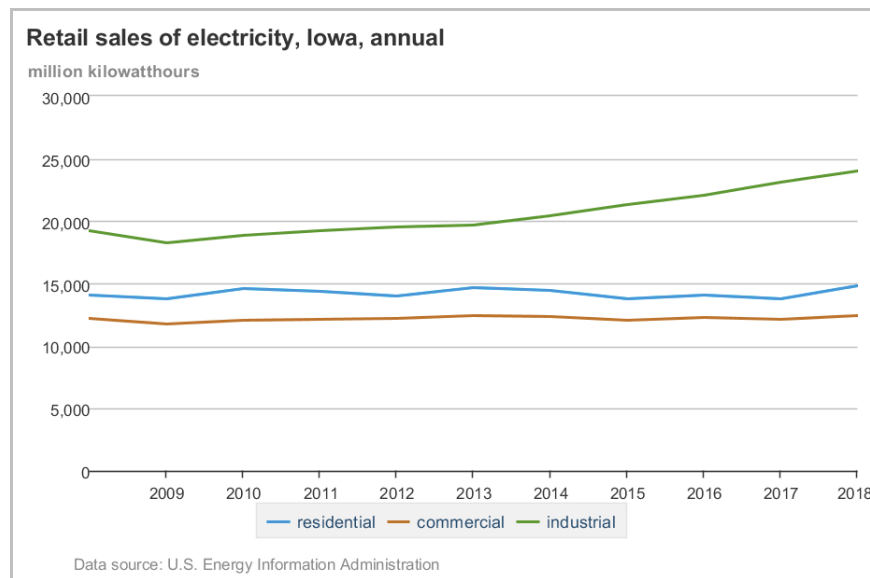
**TABLE 3. Year to Year Changes in Electric Utility Revenue Collected From Residential Iowa Ratepayers, on Average from, 2008 to 2018.<sup>27</sup>**



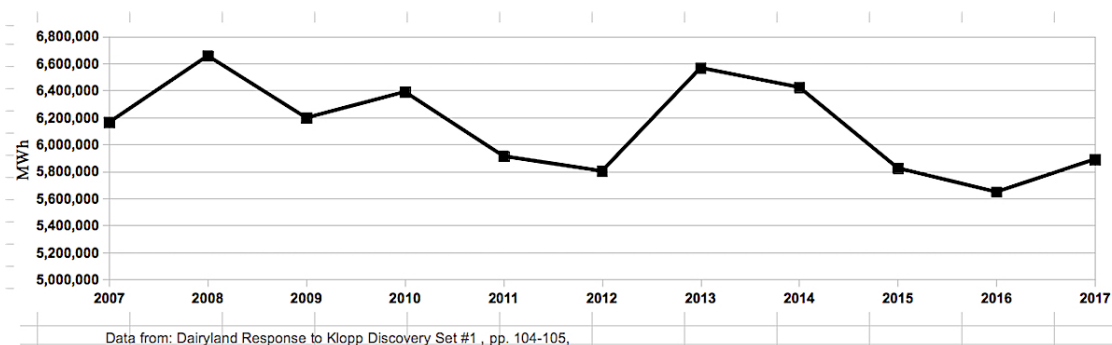
<sup>26</sup> Klopp-Reply-Exhibit-97

<sup>27</sup> Klopp-Reply-Exhibit-136

**TABLE 4. Retail Sales of Electricity By Iowa Utilities by Industrial, Commercial and Residential Ratepayers 2008-2018.** <sup>28</sup>



**TABLE 5. Consumption of Electricity (MWh) by Dairyland Power Cooperative Ratepayers, 2007-2017.** <sup>29</sup>



The need for transmission up-grading is usually signaled by increasing demand for power during the hottest days in summers. This is not the case for both DPC and ITC. The maximum summer demand from their customers has been trending downward. From 2013-2017, ITC's summer peak demand dropped 1.4% per year, Table 6. From 2013 to 2017, Dairyland's summer peak demand dropped 0.81% per year, Table 7. In general, this means the transmission lines they own or utilize are not experiencing inordinate stress.

<sup>28</sup> Klopp-Reply-Exhibit-88

<sup>29</sup> From ITC FERC FORM 1 Summer Peak Excerpts in Klopp-Reply-116; Calculations at Klopp-Reply-Exhibit-94

TABLE 6. ITC-Midwest Summer Peak Demand (MW) 2013 to 2017.<sup>30</sup>

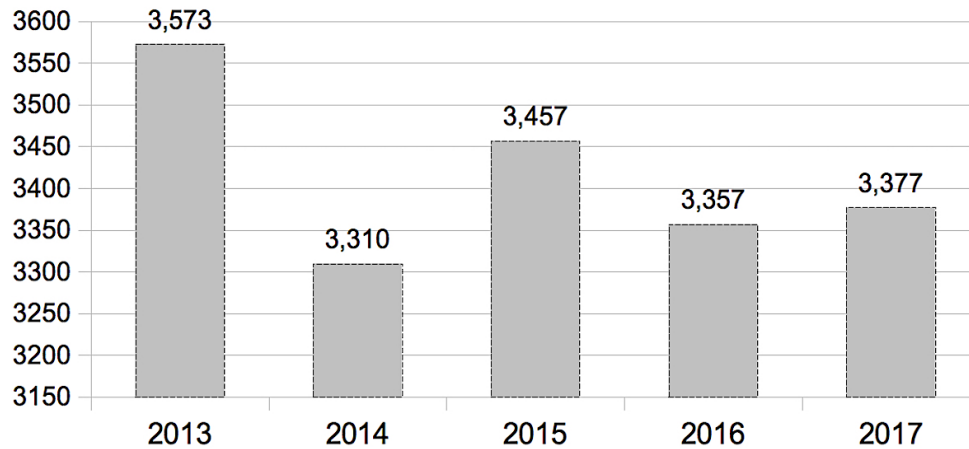
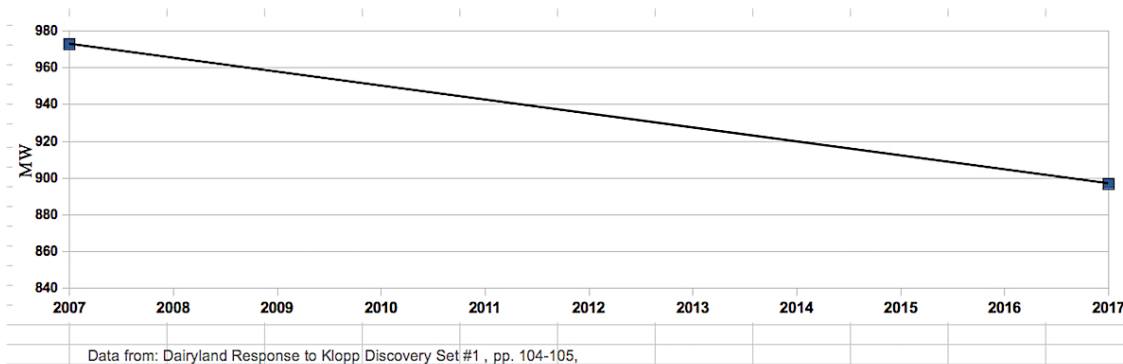


TABLE 7. Dairyland Power Cooperative Summer Peak Demand (MW) 2013 and 2017.<sup>31</sup>



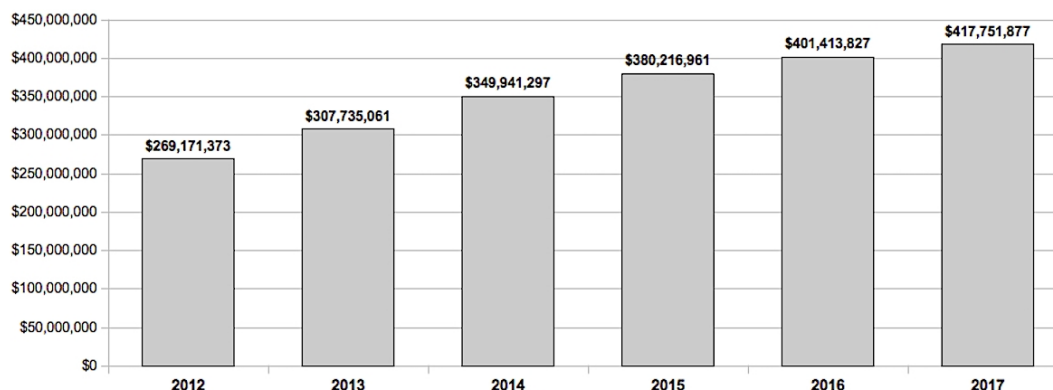
Monetarily, the last five years have been good for ITC. ITC's FERC reported *Revenues from Transmission of Electricity of Others* from 2012-2017 have increased at the fast rate of 9.1% per year, Table 8.

TABLE NEXT PAGE

<sup>30</sup> Klopp-Reply-Exhibit 116 data on spread sheet from Klopp-Reply-Exhibit 13, , page 104

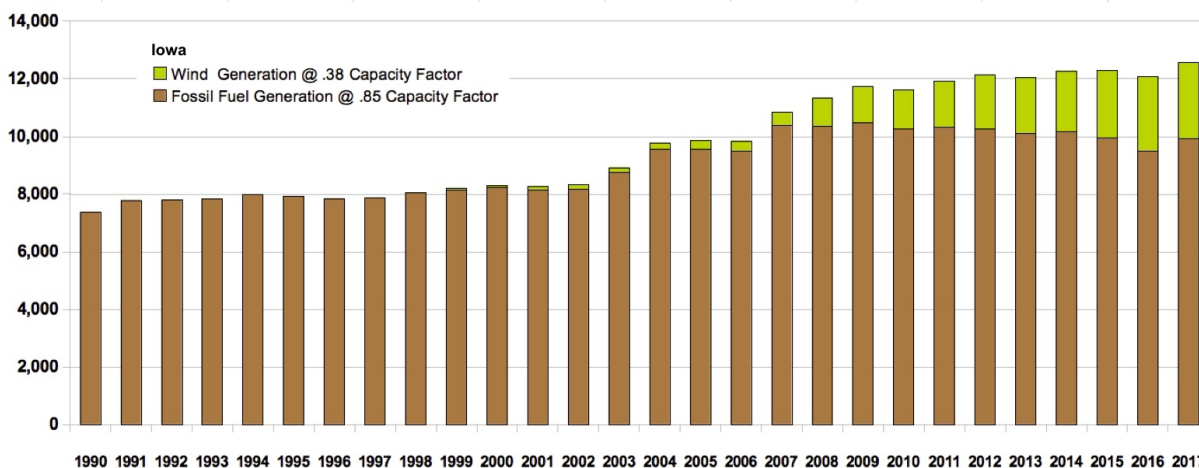
<sup>31</sup> See ITC FERC FORM 1 in Klopp-Reply-2 at p.28. Form 1 Excerpts at Klopp-Reply-Exhibit-95

**TABLE 8. ITC-M's Reported Revenues from Transmission of Electricity of Others (456.1) from 2012 to 2017.** <sup>32</sup>



Iowa ratepayers who are eager to see fossil fuel power plants rolled out of operation will not be impressed by the large number of coal and natural gas power plants that remain connected to Iowa's grid. Table 9 below, shows that in spite wind generation steadily increasing, the amount of fossil fuel has stayed pretty steady.

**TABLE 9. Iowa Generation (MW) Capability 1990-2017 Adjusted For Capacity Factor.** <sup>33</sup>



Data From: U.S. Energy Information Administration, Form EIA-860, Annual Electric Generator Report. U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report. U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report and predecessor forms.

<sup>32</sup> Klopp-Reply-117, Data from EIA Form 861 Data for Iowa 1990-2017. Exhibit includes worksheet for Table 9 and source data on Tab 4. of the same spreadsheet  
<sup>33</sup> Klopp-Reply-Exhibit-117 (.xls spreadsheet separate, not bundled)

In 2017, Iowa had just about the same amount of fossil fuel generation capability it did in 2008<sup>34</sup> when utility interests began discussing the development of wind generation in Iowa and other states. Over that time period, a number of large expansion transmission lines have been added in Iowa including 2 cost shared lines like the CHC Project.

The persistence of fossil fuel generation capacity remains an obstacle, if CO2 emission reduction is a goal, not only for Iowa, but for the states receiving Iowa's exported generation. Note that increasing the capacity of the Iowa transmission system enables all forms of generation to be distributed not just wind-sourced power. Transmission lines are still carrying a lot of dirty energy.

If MISO planning is useful for ratepayers and public interests, Iowa should be able to demonstrate how emphasis on renewable generation development can dramatically reduce fossil fuel generation and costs at the same time. However, to discerning persons able to access EIA data, Iowa is now exemplifying how state ratepayer costs can increase at a very fast pace after state regulators began betting on MISO transmission planning. Keep in mind that this is the same MISO MTEP methodology used for the CHC project. The planning is core 2010 MTEP planning that incorporated generation and transmission predictors and always forecasted increase net savings, every time MISO updated it (in 2014 and 2017).

### III. ANALYSIS OF THE PROJECTS ECONOMIC VIABILITY

#### **Q. How is Economic Accountability for Ratepayers Essential to the Public Interest?**

**A.** With the threat of climate change looming, and economic uncertainties, it is more important than ever for decisions made for in Public Interest to be based on the best information possible. Spending and investment opportunities exist on the utility side (supply-side) and on the end user (demand side). All economic options including those of alternatives must be thoroughly evaluated by a third [objective] party to unequivocally evaluate and compare the economic, reliability and environmental benefits. Ultimately, it is crucial that long-term utility investments show significant, estimated benefits to the Public in comparison to all possible alternatives, particularly those offering more dependable CO2 emission reductions.

<sup>34</sup> Klopp-Reply-Exhibit-118, Klopp-Reply-Exhibit-117

The project must provide estimated Benefits to the ratepayers (not Costs) in order to increase the probability of better financial return. However, financial investments must be weighed against risks, many of which are often not quantized. Since the public (primarily ratepayers) accept virtually all of the risks in this Project, it is reasonable for the Public to expect substantial benefits. Thus, in the regulatory review process of new utility investments, the public deserves a full accounting of costs and benefits, including how these attributes were derived. The terms and figures must also be presented in a manner that can be understood by most Iowa ratepayers.

**Q. Does MISO’s Planning and Approval Process for MTEP 17 Qualify as Representative of Public Interests in Relationship to this Proceeding before the IUB?**

A. No. An examination of MISO documents and discovery responses<sup>35</sup> has indicated that, the processes it uses to develop assumptions and analyze economic futures (resulting in estimated cost benefits) are, in my opinion, disconnected from the Interests of the Public (particularly ratepayers). Input from non-utility affiliated persons from many walks of life can be collected in many informative ways but, MISO uses none. While MISO makes frequent references to *stakeholders* and *stakeholder groups* involved with the MTEP process. A close examination of these stakeholder groups calls into question any connection to ratepayer or Public Interests. MTEP17 planning and approval was voted upon by MISO’s Planning Advisory Committee (PAC). MTEP17, approved on October 18, 2017 authorizes the ongoing and updated MTEP11 underlying assumptions and net benefit calculations used by Petitioners (In lieu of an actual analysis of the project) to propose the CHC Project to the Public and to the IUB. Results of the MTEP17 planning model constitute only “regional planning” and are misrepresented by the Petitioners and their supporters as being equivalent to an analysis of the project. Because the Petitioners and their supporting witnesses have not submitted an analysis of the project or even examined the relationship of MISO’s results in terms of relevance to the project, the Parties, Objectors, the Public and the IUB are left with undefined broad generalizations upon which to debate the merits of this proposal. There has been no independent evaluation of assumptions, variables or modeling except for that performed by Wisconsin PSC (PSCW) staff.

<sup>35</sup> Klopp-Reply-Exhibit-1 at p .16

The minutes pertaining to the MTEP17 vote of the PAC have a chart representing the stakeholder groups and how they voted:<sup>36</sup>

**Table 10. Appendix Voting Record on the MTEP17 Motion from the Planning Advisory Committee Minutes of meeting, October 18, 2017<sup>37</sup>**

<b>MISO Motion - MTEP17</b>			
Sector	Yes	No	Abstain
Coordinating:	0	0	1
End Users:	0.5	0	0.5
Environmental:	1	0	0
IPPs:	1	0	0
Muni/Coop/TDU:	0.93	0.07	0
Power Marketers:	1	0	0
Public Consumers:	0	0	1
State Regulatory:	0	0	1
T Developers:	1	0	0
TOs:	0.66	0.33	0
	<b>6.09</b>	<b>0.4</b>	<b>3.5</b>

In my reading, of the 6.09 “yes” votes cast, 3.66 were registered by parties who profit when public dependency on MISO supplied power is maintained or increased, 1.0 vote came from the Environmental Stakeholders Group, 0.5 vote came from the End Users Stakeholders Group and 0.93 vote came from Municipal Utilities and Cooperatives Stakeholder Group<sup>38</sup>. Stakeholder Groups that one might associate with greater independent ratepayer associations based on their names, *State Regulatory* and *Public Consumers*, abstained in the vote. Of the ten total votes reflected in the Table above, five represent utility interests not counting the Environmental Stakeholders Group. If this vote is reflective of usual abstention practice, when abstaining parties withdraw 3.5 votes, utility interest votes have a controlling majority in MTEP planning approval

<sup>36</sup> Klopp-Reply-Exhibit-123 at p. 7

<sup>37</sup> Klopp-Reply-Exhibit-148, page 7

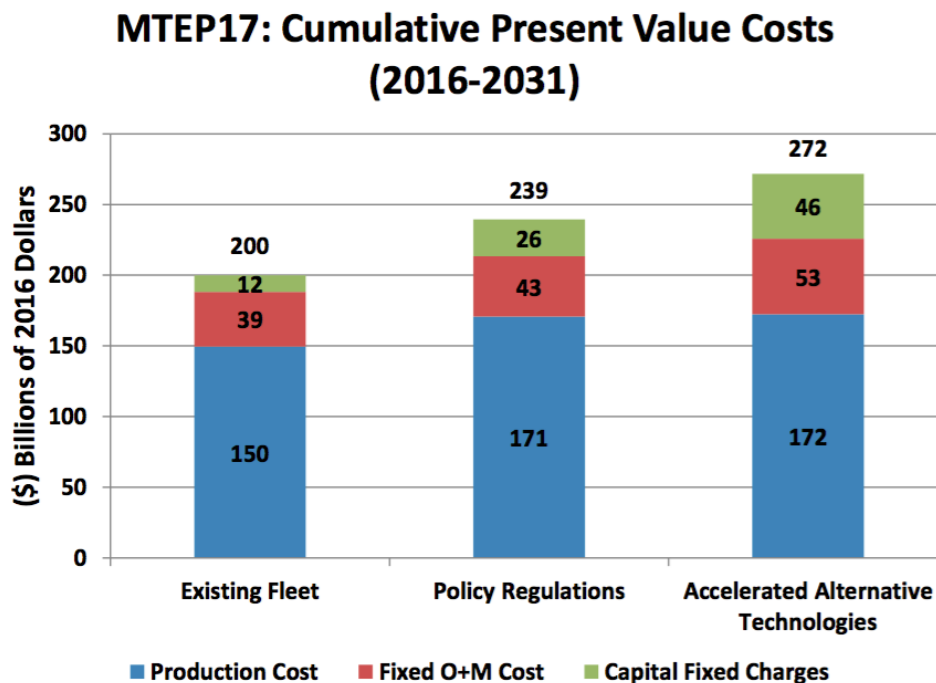
<sup>38</sup> Klopp-Reply-Exhibit-149, The 2017 PAC Stakeholder Group Membership Listing provides more detail about members’ utility affiliations. Subject to MISO providing more information, the End Users representatives seem to have established affiliations with large industrial users. The Environmental Group member, Sean Brady is indicated to be with the group, *Wind on the Wires*. I believe *WOW* has renamed itself as the, *Clean Grid Alliance*. *CGA* is a party in this case whose public outreach practice was explored in discovery [Klopp-Reply-Exhibit-9] and described in Section I of this Reply. Additionally, the Cooperative party in this case, Dairyland Power, was also queried in discovery about its very limited or no public outreach efforts to inform and collect information from ratepayers about the CHC Project [Klopp-Reply-Exhibit-13]

by a large margin.

**Q. Can Utility Stakeholders Influence Key Spending Assumptions In MTEP Planning?**

**A.** Yes. As one example, near or at the start of the MTEP17 planning process<sup>39</sup>, a step defined as DEVELOP[ING] RESOURCE PLAN AND SITE FUTURE RESOURCES where additional future power plants, related costs and locations are assumed. These assumed resources through 2031 under MTEP17 planning as can be seen in the Table below (from Figure 27: Present Value Costs<sup>40</sup>). They total \$200 Billion, \$239 Billion and \$272 Billion for the Extended Fleet, Public Policy and Advanced Alternative Technology future scenarios, Table 11.

**Table 11. Cumulative Present Value Costs (2026-2026) IN MTEP17 Futures Assumptions.**<sup>41</sup>



**Figure 27: Present Value Costs**

**Q. Is MISO's MTEP Economic Analysis Accountable to Iowa Ratepayers?**

**A.** No. In presenting MISO's planning to IUB, the Petitioners are not presenting any analysis of net economic benefits from the Project for Iowa ratepayers to consider. MISO states that it

<sup>39</sup> Klopp-Reply-Exhibit-22 At pdf p. 8 (MTEP 17 Drivers)

<sup>40</sup> Klopp-Reply-Exhibit-22 At pdf p. 37 (MTEP 17 Drivers)

<sup>41</sup> Klopp-Reply-Exhibit-22 At pdf p. 37 (MTEP 17 Drivers)

only examines regional data, generated by MISO for the entire MVP Portfolio. Also lacking is third-party analysis of the Project and comparison to alternatives.

Reiterating a core public interest in economic information in this proceeding:

***“Dubuque County requests that the following information be part of the petition for a franchise [Docket E-22386] to appropriately evaluate impact of the proposed scope and goals of said petition and subsequent considerations.***

***1. (b) Dubuque County requests clear, easy to read comparisons of average residential commercial and industrial utility bills for 5, 10 and 20 years with and without the proposed high-voltage transmission facility in-service.***

In reply to this request, Petitioners have substituted two irrelevant references to MISO planning summarized in simple language as:

A) A 2014 MISO calculation of \$21 annual net benefits for all MVP projects over an unstated period of time.<sup>42</sup>

B) A range of benefit to cost ratio calculations for all MVP projects calculated by MISO in 2016. The update showed greater benefits primarily from assuming higher electricity prices than assumed in 2011 and 2014.<sup>43</sup>

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<sup>42</sup> ITC Midwest Curtis Direct Exhibit 3, page 3, Curtis letter in response to request 1(b) in the Dubuque County Resolution, “Over the next 20 to 40 years, MISO estimates that the average electricity customer in the MISO region will see \$33 in annual benefits for a \$12 a year investment for the entire MVP portfolio.” No source citation for this data is provided.

<sup>43</sup> There are two sources with variation supplied by the Petitioners: (1) ITC Midwest Curtis Direct Exhibit 3, page 3, Curtis letter in response to request 1(b) in the Dubuque County Resolution, “MISO affirmed the savings benefits from the MVPs in its most recent Triennial Review, issued in 2017. That review indicated that the MVP portfolio of 17 projects will generate benefits in the range of \$2.20 to \$3.40 for each dollar spent (a benefit-to-cost ratio ranging from 2.2 to 3.4), which is an increase from the 1.8 to 3.0 benefit-to-cost ratio range calculated when the projects were announced in 2011.” and in n 2017 Triennial Review, ITC Midwest Eddy Direct Exhibit 3, page 23, “Differences between reviews are primarily driven by natural gas prices and retirements impacting congestion and fuel savings. Total portfolio costs have also increased from \$5.56 billion in MTEP11 to \$6.65 billion in MTEP17, decreasing the net benefits. Even with the increased portfolio cost estimates, the increased MTEP17 benefit estimation results in portfolio benefit-to-cost ratios that have increased from 1.8 to 3.0 in MTEP11 to 2.2 to 3.4 in MTEP17.”

*The Petitioners' two, cost-benefit substitutions do not:*

- *Address the potential economic impacts of the CHC Project on its own for regional ratepayers to evaluate.*
- *Address the potential economic impacts of the CHC Project on its own for Iowa customers to evaluate.*
- *Meet Dubuque County's public interest request for, "clear, easy to read comparisons of average residential commercial and industrial utility bills for 5, 10 and 20 years with and without the proposed high-voltage transmission facility in-service."*

**Q. Is there Any Information Available on the Project's Economic Viability?**

**A.** Yes. To augment the IUB's understanding of the economic dynamics of this project (since the Petitioners have not provided an economic analysis), I would like to share some of the projects economic profile uncovered by engineering staff from the PSCW in their analysis. The PSCW staff ran PROMOD modeling on the project to confirm the analysis provided by the Applicants (provided by American Transmission Company staff-ATC) and followed this with well thought through modifications to some of the assumptions. A complete summary of what the PSCW staff identified can be found in Intervenor Klopp's Initial Brief,<sup>44</sup> pages 2-11, on PSCW Docket 5-CE-146.

There are a few very important findings that I would like to discuss here. While Wisconsin Applicants purported analysis with a more favorable positive economic outlook, PSCW staff found that:

- The CHC project has negative Net Benefits (Costs) in 8 out of 11 modeling scenarios.<sup>45</sup>
- The scenarios showing positive Net Benefits were in the AAT future, the one

<sup>44</sup> Klopp-Reply-Exhibit-125, page 2-11

<sup>45</sup> Klopp-Reply-Exhibit-126 at p. 34

considered least last likely to occur.<sup>46</sup>

- Cardinal- Hickory Creek project had negative net economic benefits (costs) to the MISO market in the PROMOD modeling submitted by the applicants, for all sensitivities using the Policy Regulations future as a basis.<sup>47</sup>
- The Policy Regulations future is considered the most likely to occur.<sup>48</sup>
- PSCW staff discovered that performing renewal and upgrades to known reliability projects provides the capacity needed to clear up congestion (claimed by the Applicants as one of the main problems/need for CHC) at a fraction of the cost.<sup>49</sup> The cost of this alternative (known as BWARA) Is roughly \$900.000.<sup>50</sup>

#### **Q. How should Modeling Results be used in Determining Economic Viability?**

**A.** In the interest of real world decision making, I would like to frame the conversation of economic viability based on modeling analyses using different variables, assumptions, calculations, etc., by putting this scientific process in context. When one uses a mathematical model to analyze a complicated system, it is an attempt to do ones' best to capture what is important about the system and incorporate those aspects into a model. The hope is, that the model will provide outputs that are close to what would actually occur in the system. Because of complexity and unknowns related to; how different components of a system may interact; what those components may actually be in the future; or the value of those components in the future, models are essentially a best guess. Given the intrinsic uncertainty in even the best modeling and the changing face of energy generation that is currently evolving in our world, it is prudent to move forward with a degree of trepidation. Setting out on a path that is costly and has huge negative impacts to the environment and our communities is risky. This is especially true when the inputs to the system have been found to have serious flaws, as the PSCW modeling analysis demonstrated. Cautiously testing the ground on alternatives to this

<sup>46</sup> Klopp-Reply-Exhibit-128 , page 5

<sup>47</sup> Klopp-Reply-Exhibit-159 page 7, Klopp-Reply-Exhibit-126, page 32

<sup>48</sup> Klopp-Reply-Exhibit-126, page 32

<sup>49</sup> Klopp-Reply-Exhibit-126, page 14-18, Klopp-Reply-Exhibit-125, page.15-16

<sup>50</sup> Klopp-Reply-Exhibit-150, page10

path, that are more affordable and environmentally friendly seems like a much lower risk.  
Further discussion on alternatives is presented below.

**Q. Is there Evidence that not approving the CHC Project would have negative economic impact on ratepayers in portions of the MISO footprint, including Iowa.**

**A.** Witness Ellis would like ratepayers to believe that, if the[CHC] project is not approved “The revised plan would likely have a negative economic impact on ratepayers in portions of the MISO footprint, including Iowa.” Mr. Ellis has no Project-specific analysis to base any such claim on. However, PSCW engineer Vedvik, with PSCW staff colleagues, conducted Project specific analysis. I draw your attention to a contrasting statement, “It appears that the proposed Cardinal- Hickory Creek project had negative net economic benefits to the MISO market in the PROMOD modeling submitted by the applicants, for all sensitivities using the Policy Regulations future as a basis.”<sup>51</sup> So, in the most likely future, the project not only, does not produce benefits, but it incurs costs to the entire MISO Region.”

#### **IV. ANALYSIS OF ENVIRONMENTAL ASPECTS OF THE PROPOSAL**

**Q. Why is Environmental Accountability a Key Determinant of “Public Interest”?**

**A.** Public concern over climate change has been steadily increasing, to the point where one can hardly listen to the news or read a newspaper without encountering a dialogue about it. The key concern related to climate change is increasing carbon dioxide levels in the atmosphere. The dialogue about it is “what do we need to do to decrease CO2 emissions?” Exploring this question means looking at what we have used so far and determining what has been effective in terms of avoided Metric Tons of CO2. The US Department of Energy did such an analysis in October, 2018; they divided the question into traditional Supply-Side and Demand-Side measures, “U.S. electric power sector carbon dioxide emissions (CO2) have declined 28% since 2005 because of slower electricity demand growth and changes in the mix of fuels used to generate electricity.” See Table 12.

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<sup>51</sup> Klopp-Reply-Exhibit-126, page 32

**TABLE 12. U.S. Carbon Emission Reductions 2005 to 2017<sup>52</sup>**

<i>MEANS</i>	<i>EXPLANATION</i>	<i>REDUCED CO<sub>2</sub></i> <i>(MMmt)</i>	<i>Percentage of</i> <i>2005-2017</i> <i>CO<sub>2</sub></i> <i>REDUCTION</i>
<b>Reduced Demand</b>	U.S. electricity demand has decreased in 6 of the past 10 years,... If electricity demand had continued to increase at the average rate from 1996 to 2005 (1.9% per year) instead of its actual average rate of -0.1% per year, U.S. power sector CO <sub>2</sub> emissions in 2017 would have been about 654 MMmt more than actual 2017 levels.	<b>654</b>	<b>50.3%</b>
<b>Conversion of Coal and Oil Power Plants to Natural Gas</b>	The substitution of natural gas for other fossil fuels has largely been market driven,... In 2016, natural gas generation surpassed coal as the largest source of electricity generation.	<b>329</b>	<b>25.3%</b>
<b>Added Renewable Generation</b>	In 2005, non-carbon sources accounted for 28% of the U.S. electricity mix. By 2017, that share had grown to 38%. Almost all of this growth was in renewables, including wind and solar, as shares for other non-carbon sources such as nuclear and hydroelectricity remained relatively flat.	<b>316</b>	<b>24.3%</b>

MMmt – Million Metric tons

**TABLE 13 Upfront Costs of Energy Efficiency & Electric Generation<sup>53</sup>**

<i>MEANS</i>	<i>Cost</i>	<i>CO<sub>2</sub> Reduction Cost-Effectiveness</i>
<b>Reduced Demand as Energy Efficiency (EE)</b>	<b>.035 / kWh</b>	<b>Most Cost-Effective</b>
<b>Conversion to Natural Gas Combined Cycle</b>	<b>.07 / kWh</b>	<b>50% as Cost-Effective as EE</b>
<b>Addition of Utility Scale Solar/Wind</b>	<b>.06 / kWh</b>	<b>58% as Cost Effective as EE</b>

History teaches us that in order to reduce CO<sub>2</sub> emissions with the fastest and most cost-effective

<sup>52</sup> Klopp-Reply-Exhibit-152, EIA, Carbon dioxide emissions from the U.S. power sector have declined 28% since 2005, October 2018

<sup>53</sup> Klopp-Reply-Exhibit-153 *How Much Does Energy Efficiency Cost, ACEEE*

1 methods, the first step is applying all of the tools of energy reduction including conservation,  
2 conservation education, dwelling improvements, energy efficient appliances and equipment,  
3 modern load management and home/business/local solar and solar + storage.

4  
5 These means are most effective because they directly confront the source of electricity supply  
6 CO2 problem: the high percentage of fossil fuel generation in Midwest/MISO energy supply.

7  
8 The Independent Market Monitor of MISO's performance, Potomac Economics, reported that in  
9 2018<sup>54</sup>, 70% of the electricity in Midwest outlets was from fossil fuel generation and only 8%  
10 was from wind generation. Despite the addition of many GW's of wind power and many, very  
11 costly expansion transmission lines from 2013-2018, the annually measured percentage of wind  
12 in Midwest outlets had increased only 0.6% over five years of steady development<sup>55</sup>.

13  
14 **Q. Are there other significant factors that can speed up CO2 reduction that MISO,**  
15 **Petitioners and Supporting Wind Power Developers are not engaging in their energy**  
16 **planning?**

17  
18 **A. Yes.**

- 19 • MISO has never created a future energy scenario in their MTEP planning based on  
20 aggressive investments in energy efficiency and load management to produce negative  
21 load growth.

- 22  
23 • MISO does not track CO2 emissions for planning and other purposes.<sup>56</sup>

- 24  
25 • To date, when MISO has breeched the CO2 reduction topic, it has only done so on a  
26 regional level, not by Zones, states, counties or by power plants.<sup>57</sup>

- 27  
28 • To date, MISO has not attempted to predict long term CO2 reduction impacts of a single,

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1 54 Klopp-Reply-Exhibit-151, page 2, 2018 STATE OF THE MARKET REPORT FOR THE MISO  
2 ELECTRICITY MARKETS

3 55 Klopp-Reply-Exhibit-151, page 4, "[MISO] Wind resources accounted for over 9.3 percent of installed capacity  
4 and 7.4 percent of generation in 2013. 2013 STATE OF THE MARKET REPORT FOR THE MISO ELECTRICITY  
5 MARKET

6 56 Klopp-Reply-Exhibit-18, page 23, MISO 2nd Response to Discovery

7 57 Klopp-Reply-Exhibit-18, page 23, MISO 2nd Response to Discovery

1 proposed transmission project.

- 2
- 3 • To date, MISO has not sustained discussion about potential changes in electricity market
  - 4 policies that would further the present, marginal abilities for remotely located renewable
  - 5 generation to compete with fossil fuel generation.
  - 6
  - 7 • To date, MISO has not contemplated a Distributed Energy Resource based, future energy
  - 8 scenario in MTEP planning based on aggressive, “local first,” implementation of
  - 9 distributed generation+solar, investments in energy efficiency, linked battery storage and
  - 10 load management.

11

12 **Q. Can you roughly assess the environmental/public interest significance of MISO’s**

13 **estimate 13-21 million tons of CO2 reduction in 2031 as stated in the 2017 MVP Triennial**

14 **Review?**<sup>58</sup>

15

16 **A.** I can. MISO did not provide much information about their assumptions and calculations. The

17 entirety of the CO2 citation for all MVP Projects from the 2017 MVP Triennial Review is shown

18 here:

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27 TABLE NEXT PAGE

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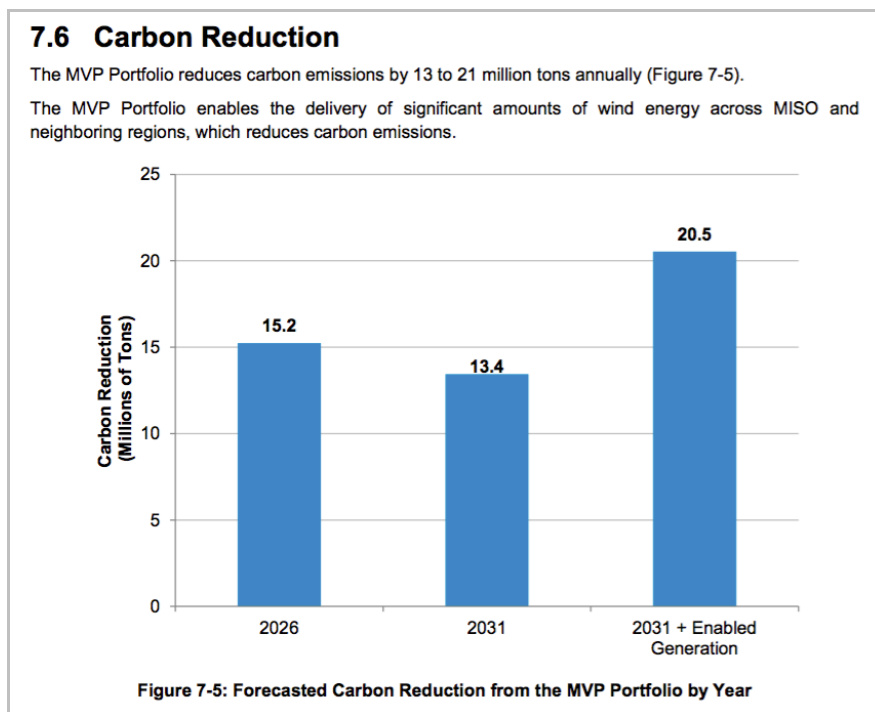
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1 58 ITC Midwest Eddy Direct Exhibit 3 Page 39 of 50 “7.6 Carbon Reduction The MVP Portfolio reduces carbon

2 emissions by 13 to 21 million tons annually (Figure 7-5). The MVP Portfolio enables the delivery of significant

3 amounts of wind energy across MISO and neighboring regions, which reduces carbon emissions.

**TABLE 14. CARBON REDUCTION DATA FROM 2017 MVP TRIENNIAL REVIEW**



**Additional factors to take into consideration**

- MISO uses, smaller, US tons instead the more common unit of Metric Tons.
- Another figure in MTEP17 assumptions<sup>59</sup> provides baseline estimation of the future CO<sub>2</sub> emissions in the MISO footprint from 550Mt in 2005 to 450Mt in 2031 which is a rate of reduction of -0.8% per year. The estimated emissions without actions taken is 350Mt in 2031.
- MISO sees regional CO<sub>2</sub> emissions dropping with no new action from 450Mt in 2018 to 350Mt in 2031, a drop of 22%.
- As the CHC Project is one of 17-18 transmission lines in the MISO MVP Portfolio, its share of total portfolio benefits would be about 6%.
- Iowa's CO<sub>2</sub> emissions in 2017 were 30.66 Million Metric Tons or 33.7 Million short tons. At MISO's no action decline rate of -.8% per year, Iowa CO<sub>2</sub> emissions would be about 30.1Mt.
- For the sake of ease, assume that all of the CO<sub>2</sub> emissions avoided by the CHC Project are in Iowa.

**Assessment of the Significance 13.4 to 20.5 Million Tons Reduced in 2031**

Based on the above factors and MISO's estimate of 13.4 to 20.5 Million tons of CO<sub>2</sub> reduction from all 17-18 MVP transmission lines in 2031:

<sup>59</sup> Klopp-Reply-Exhibit-22, page 38 of 45 Section 3.2. CO<sub>2</sub> Output by Future

- With Cardinal Hickory Creek acting alone-- that is-- without the wind and natural gas generation build-out that MISO planning assumes, State of Iowa CO2 emissions would be 2.6% lower or 790,000 less short tons in 2031. <sup>60</sup>
- With Cardinal Hickory Creek and additional wind and natural gas generation that MISO planning assumes, State of Iowa CO2 emissions would be 4% lower or 1,200,000 less short tons in 2031. <sup>61</sup>
- MISO does not provide CO2 reduction estimates for any other year.

**Q. Is 790,000-1,200,000 short tons of CO2 reduction per year consistent with estimates made by Dr. Anne Smith for the Wisconsin review of the CHC Project?**

A. It is greater. American Transmission Company expert witness, Dr. Anne Smith<sup>62</sup> estimates a reduction of 180,000 tons per year under the Public Policy Future for Iowa, Wisconsin and Minnesota, a much larger area than Iowa.

**Q. How do these estimates compare to one submitted by Expert Witness Michael Goggin?**

A. It is impossible for me to discern and he has not replied to discovery. Goggin begins his estimate for the CHC Project based on a highly impractical assumption that the CHC Project would transport *only wind power* while the Midwest grid currently averages 8%. Further, his conclusion contains no time reference. “The AVERT tool indicates that 1,200 MW of additional wind deployment would displace 8,409,990 pounds of sulfur dioxide, 399,450 pounds of fine particulate matter, 5,653,400 pounds of nitrogen oxides, and 4,090,920 tons of carbon dioxide.” In any case, a great deal more data is required to assess the relevance of his findings.

**Q. How do these CO2 reduction estimates for the CHC Project compare to those of a Non-Transmission Alternative submitted in the Wisconsin case?**

A. Poorly. For expert witness Bill Powers’ Optimized Non-Transmission Alternative<sup>63</sup> utilizing energy efficiency, industrial load management, residential solar, residential aggregated battery storage and municipal utilities with solar+storage systems, he estimated that, “33.1 million

<sup>60</sup> (13.4Mt/17 lines) = 790,00 / 30.1Mt = 2.6%. (30.1Mt is Iowa estimated CO2 emissions in 2031 at MISO’s trend decline rate of .8% per year)

<sup>61</sup> (20.5Mt/17 lines) = 1.2Mt / 30.1Mt = 4%. (30.1Mt is Iowa estimated CO2 emissions in 2031 at MISO’s trend decline rate of .8% per year)

<sup>62</sup> Klopp-Reply-Exhibit-154, page 2

<sup>63</sup> Klopp-Reply-Exhibit-155, page 5

metric tons of greenhouse gas reductions are achieved with the optimized NTA over 40 years.”  
The greenhouse gas reductions associated with the optimized NTA CO2 reduction are  
significantly greater than the average greenhouse gas reductions projected by the Applicants<sup>64</sup> for  
[the CHC Project] under the EF and PR Futures scenarios.”<sup>65</sup> Powers’ \$177 Million NTA has a  
20:1 cost benefit ratio.<sup>66</sup>

**Q. Have Petitioners Accounted for Project CO2 Reduction Quantitatively, in this Proceeding?**

**A.** No. Neither the Petitioners nor MISO have provided a quantitative estimate of CO2  
emission reductions for the Project alone, over a 40-year or longer lifetime.

**Q. Have Petitioners Substantiated the cited “Low Cost Wind” energy savings from CHC?**

**A.** No. It is wholly impossible to weigh any impacts on wholesale or retail energy costs for the  
Project because none of the parties has conducted the necessary PROMOD analysis. PSCW  
engineering Vedvik states “It appears that the proposed Cardinal-Hickory Creek project had  
negative net economic benefits to the MISO market in the PROMOD modeling submitted by the  
applicants, for all sensitivities using the Policy Regulations future as a basis.”<sup>67</sup> This translates to  
‘costs for the affected MISO footprint including Iowa. MISO and Petitioners were asked to  
estimate the congestion and fuel cost savings from the existing MVP projects that are in service.  
They refused.

**Q. Mr. Eddy states “the Project is needed to deliver the full energy output of wind generations within and outside the State of Iowa,” has this been substantiated?**

**A.** No. This would require considerable information which Mr. Eddy does not reference or  
provide. For example, there no estimates of existing Iowa wind (MWh) generation exports in the  
record.

**Q. Does MISO energy planning specifically address the legacy of fossil fuel generation in Iowa?**

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<sup>64</sup> Klopp-Reply-Exhibit-155, page 20, ATC projected 20 and 40 short tons for the Extended Fleet and Public Policy futures over 40 years.

<sup>65</sup> Klopp-Reply-Exhibit-155, page 11

<sup>66</sup> Klopp-Reply-Exhibit-155, page 9

<sup>67</sup> Klopp-Reply-Exhibit-126 at p. 32 Direct-PSCW-Vedvik

A. No. As was determined using EIA data earlier, Iowa harbors comparatively large reserves of fossil fuel generation. Petitioners and Wind Energy Developers do not discuss how the CHC Project would accelerate specific retirements of this generation. As is, it counteracts the benefits of wind generation.

**Q. Have the Petitioners or the Wind Development Experts Substantiated their Assertions that the number of generators in the MISO queue insure higher percentage of signed GIA's?**

A: No. According to the data<sup>68</sup> provided by MISO (chart on right), an average of about 1740 MW of wind generation was placed into service in the MISO footprint per year from 2011 to 2019.

According to data<sup>69</sup> provided by MISO, 599,643,758 MWH of power was sold in the MISO footprint in 2017.

Using a capacity factor of 0.38<sup>70</sup>, 1740 MW of added wind generation per year could account for 1% of power usage but only without factoring in market competition and congestion.

MW with signed Generator Interconnection Agreement [C]
281
337
1,700
1,921
7,151
2,530

While every new wind farm is cause for celebration for the affected developers, the pace of 1740 MW added per year under these factors and the .5% annual growth that MISO assumes helps explain why growth in the consumption of wind power remains well under 1% per year.

## V. ANALYSIS OF THE PROPOSAL'S RELIABILITY CLAIMS

### Reliability Performance in the Context of Public Interest

**Q. Are there reliability concerns for IOWA or MISO established by the North American Electric Reliability Corporation?**

A. No. The North American Electric Reliability Corporation (NERC) in its most recent Summer Reliability Assessment (June 2019) cites no reliability issues for the MISO region. Further, the 2019 report points out that MISO is planning enhancements to further expand regional load

<sup>68</sup> Klopp-Reply-Exhibit-1, at p. 18

<sup>69</sup> Klopp-Reply-Exhibit-1, at p. 4 Response to Data Request 2(B).

<sup>70</sup> A capacity factor of .38 is generous for the MISO footprint. In Klopp-Reply-Exhibit-17, MTEP17 MVP Triennial Review Business Case, tab, "Wind Zone Benefit Spread," the average capacity factor for Iowa is stated as .36. The average capacity factor for all MISO Zones is 31.47%

1 management capabilities which would increase reliability resources without adding new lines<sup>71</sup>

2 Highlights from NERC's 2019 Summer Report (quoted):

4 • MISO does not anticipate reliability issues during the upcoming season for  
5 typical resource outages and load. MISO studied the summer system reliability  
6 under various resource outage and load scenarios. MISO held a summer  
7 readiness workshop with its members on April 23, 2019, to prepare for summer  
8 operations.

10 • MISO worked with entities in the SERC<sup>72</sup> Region to develop an operating  
11 procedure to address potential issues that may result from high MISO north and  
12 south transfers. These transfers between MISO operating areas can cause  
13 entities in other Regions to experience loop flows that can impact system  
14 operations.

16 • MISO's Load Modifying Resource (LMR) FERC filing is expected to  
17 provide MISO's operators with greater access to the existing capabilities of  
18 LMRs. Enhancements include requiring LMR units to operate to their existing  
19 capability and added processes to schedule LMRs in anticipation of emergency  
20 conditions.

21  
22 Reliability is strongly affected by peak demand conditions and in this regard, NERC does not  
23 anticipate long-term, peak related reliability concerns for MISO. In its *2018 Long-Term*  
24 *Reliability Assessment*, NERC forecasts MISO's load to grow only 0.25% per year from 2008-  
25 2018<sup>73</sup>. This amount is half the load growth rate that MISO assumed in 2017 for its preferred,  
26 "Policy Regulation" future scenario. NERC's long view of reliability in MISO departs even  
27 further from MISO assumptions concerning the potential of load management. NERC's 0.25%  
28 per year forecast is only 1/3 of the 0.6% per year growth in peak demand that MISO assumes,  
29 contradictorily, with the highest degree of load management in effect under the **Advanced**

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1 71 Klopp-Reply-Exhibit-134 at p. 7

2 72 The SERC Reliability Corporation (SERC) is responsible for ensuring a reliable and secure electric grid across  
3 16 southeastern and central states.

4 73 Klopp-Reply-Exhibit-145, page 2

**Alternatives Technologies** future scenario.<sup>74</sup>

**Table 15. NERC Forecast of MISO 2018-2028 Internal Demand**<sup>75</sup>

Quantity	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total Internal Demand	125,284	125,293	125,636	125,994	126,414	126,779	127,279	127,620	128,217	128,116

**Q. Is there a record of power outages being more common in Iowa?**

**A.** No. Power outages are less common as measured by the length and the number of end use customers affected in Iowa compared to utilities across the US. Each year, the US Department of Energy (EIA) collects power outage reports from about 1000 utilities across the United States including 39 reporting utilities in Iowa. This information is shared with the public as the *Reliability.xls* spreadsheet in the 2018 Annual Electric Power Industry Report, Form EIA-861 data.<sup>76</sup>

There are a number of ways that the severity of power outages are assessed. The one used for comparison is the first standard listed in the 2018 report (SAIDI with MED). It is used by most if not all utilities and it accounts for duration, numbers of affected ratepayers and it factors in some weather related disturbances which seems to be more and more typical. EIA's spreadsheet can be sorted by the three types of utilities tracked (a) Investor Owned Utilities [for-profit] (b) Municipal Utilities and (c) Cooperatives. The Municipal Utilities and Cooperatives have been combined into one group. Power interruptions are stated in minutes per year, so the relative degree of power interruption becomes evident when the SAIDI with MEDI (see Table 16 askerisk) columns are sorted by descending value. Using averaging, it is possible to observe that Iowa ratepayers experienced considerably fewer hours of interrupted electrical power in 2018 compared to the average across all US utilities.

TABLE NEXT PAGE

<sup>74</sup> Klopp\_Reply\_Exhibit-22\_at p. 36

<sup>75</sup> Klopp-Reply-Exhibit-145, page 2

<sup>76</sup> EIA Annual Electric Power Industry Report, Form EIA-861 detailed data files. These files can be a challenge to locate: <https://www.eia.gov/electricity/data/eia861/> Bundled documents for 2018 are here: <https://www.eia.gov/electricity/data/eia861/zip/f8612018.zip>

**Table 16. Power Interruptions in Iowa Compared to U.S. Averages in 2018<sup>77</sup>**

<b>U.S. Utilities</b>	<b>Utilities in U.S.</b>	<b>Average Hours of Power Interruption Per U.S. Electric Customer in 2018*</b>	<b>Average Hours of Power Interruption Per Iowa Electric Customer in 2018*</b>	<b>Utilities in IOWA</b>	<b>Average Fewer Hours of Disruption Per Customer in Iowa in 2018</b>
<b>Investor Owned Utilities</b>	173	7.1	2.3	2	4.8
<b>Municipal Utilities and Coops</b>	931	5.6	2.3	37	3.3

\* Under SAIDI + MED standards involving the System Average Interruption Duration Index or the average outage duration for each customer in minutes per year with a designator for catastrophic events when at least 10% of the customers within an operating area experience a sustained interruption during a 24 hour period. Data from 2018 Annual Electric Power Industry Report, Form EIA-861 detailed data files.

**Q. Does the Iowa Office of Consumer Advocate observe there are electric reliability concerns in Iowa?**

**A.** No. When Intervenor Grice asked the Iowa Office of Consumer Advocate in discovery, “Please provide. . .OCA’s position on the current reliability of electrical services in Iowa,” the office’s complete reply is,

*“OCA believes that the current reliability of electrical services in Iowa is reasonably adequate.”<sup>78</sup>*

### **Reliability in the Context of Utility Interests**

**Q. Does MISO regional MVP/MTEP17 planning forecast reliability concerns in Iowa going forward?**

**A.** No. MISO has not assessed reliability issues for Iowa in this docket to date. MISO’s assessment of system reliability was conducted in 2010 at a time when MISO was anticipating peak demand to grow considerably more than the flat and declining condition that actually materialized. MISO’s evaluation is for the whole MISO region and it assumes that all \$6.5 billion of MVP lines are in-service. Crucially, the CHC Project is the only remaining MVP project to be reviewed and three of the MVP projects are scheduled to serve Iowa improving reliability if the CHC Project is not built. In addition to these incongruities in MISO’s assessment, only 2 of the 31 MISO system wide “instabilities” were located in Iowa when estimated nearly decade ago.<sup>79</sup>

<sup>77</sup> Klopp-Reply-Exhibit-139, has .xls worksheet for this table.

<sup>78</sup> Klopp-Reply-Exhibit-12, page10

<sup>79</sup> Klopp-Reply-Exhibit-1, page 22, Only two of the projects in the chart are located in Local Resource Zone 3 corresponding with Iowa.

**Q. Are there scheduled rebuilds for very old, existing transmission lines in strategic locations that could very significantly improve reliability in Iowa and Wisconsin without the CHC Project being built?**

**A.** Yes, this is the conclusion reached by the only contemporary analysis done on “asset renewals” by PSCW staff engineers<sup>80</sup> based on the lifespan of wooden pole transmission facilities being 70-75 years. Inexplicably, MISO<sup>81</sup>, ITC-Midwest<sup>82</sup>, and Dairyland Power Cooperative<sup>83</sup> are adamant that building the CHC Project prevents the need to rebuild at least two, crucially located, wooden pole facilities.<sup>84</sup> The Turkey River-Stoneman 161 kV crossing the Mississippi River at Cassville was placed into service in 1949, 74 years before the forecasted CHC in-service date of 2023. The connecting, Stoneman-Nelson Dewey 161 kV line was placed into service in 1951<sup>85</sup>, 72 years before Petitioners would like to place CHC in service. Recognizing that both lines would have to be rebuilt in the immediate future in any case, Wisconsin PSC staff engineers analyzed the transmission system impacts of rebuilding them ahead of schedule without the CHC Project in the system. For the modeling, PSCW staff determined that rebuilding the critically located 161 kV lines would double their power carrying abilities.

The analysis showed a substantial increase in power transfer capability between Iowa and Wisconsin. PSCW staff found improvements so significant that it led them to develop a high

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<sup>80</sup> Klopp-Reply-Exhibit-126, PSCW Vedvik-Direct, page 12-19

<sup>81</sup> Klopp-Reply-Exhibit-17, page 21, Klopp Follow-up Request to MISO asks, “I note that TRK RIV5-STONEMAN is listed as an Avoided Investment. Please explain if it is accurate to claim this 161 kV line as avoided investment when the Wisconsin PSC staff during its review determined that this facility would be reaching the end of its life expectancy before 2031.” MISO Responds: . . . The reference to the “Wisconsin PSC staff during its review” is not further identified and did not involve MISO. No project has been identified in the MTEP process dealing with the identified facilities reaching the end of their life in 2031 or any action responsive to such a situation (to the extent that it exists).” MISO clearly lists the 1949 Turkey-River 161 kV Facility in Table 6-13 *Avoided Transmission Investments* in the 2017 MVP Triennial Review (print p. 35, Ellis Exhibit 3).

<sup>82</sup> Klopp-Reply-Exhibit-2, page 56, ITC-Midwest states that Turkey River-Stoneman 161 kV facility was re-wired in 2015 with a single circuit largely due to the plant closures in Cassville. The transmission builder still considers the CHC Project as “avoiding” rebuilding this crucially located line, even though they state that its life expectancy is 9 years. 2028 is only 5 years after CHC would be in operation. Five years represents on 6% of its 75 year lifespan.

<sup>83</sup> Klopp-Reply-Exhibit-17, page 129, In response to Klopp discovery asking to, “Please provide a list by name, of stability and NERC violations 161 kV or lower voltage within your service territory that would be avoided if the CHC project is approved and built,” DPC states that, “construction of the Project will avoid the requirement to rebuild the Turkey-River to Stoneman 161 kV line and the Nelson Dewey to Stoneman 161 kV line.” On p. 133, DPC confirms the ages of the lines that ITC cites. DPC also confirms that the “The life expectancy [of the Turkey-River to Stoneman 161 kV line] did not change with the [1985] upgrade.”

<sup>84</sup> Klopp-Reply-Exhibit-17, page 21, Klopp-Reply-Exhibit-13, page Klopp-Reply-Exhibit-2, page

<sup>85</sup> Dairyland Power has also confirmed the ages of these facilities through Discovery, page 132-135 Klopp-Reply-Exhibit-13

performing, very cost-effective alternative to the CHC Project which they named the Base With Asset Renewal Alternative (BWARA).

On one hand, MISO has supplied out of date and inconsistent lists of reliability and asset renewal projects, but on the other hand PSCW staff engineers have run PowerWorld and PROMOD analysis of a full Alternative to the Project.

**Q. Are there additional costs for Iowa and Wisconsin ratepayers as a result of the Petitioners maintaining that the Turkey River-Stoneman 161 kV facility is an “avoided” renewal asset?**

Yes. Instead of the Petitioners admitting that the Turkey River-Stoneman 161 kV Project has to be rebuilt under all circumstances, the Petitioners are turning eyes away from a \$900,000 alternative that would save ratepayers hundreds of millions of dollars.

To date, utilities have only considered rebuilding the Turkey River-Stoneman 161 kV Mississippi River crossing as a single circuit line even though their CHC Project crossing would have two circuits. The improvements PSCW staff found with the Turkey River-Stoneman and Stoneman-Nelson Dewey upgrades stand to be very significant if two circuits totaling about 800 MVA were to cross the river and continue to the Nelson Dewey substation.

Even if rebuilt as a single circuit, the Turkey River-Stoneman 161 kV rebuild would address all or nearly all<sup>86</sup> of the reliability benefits considered in the Wisconsin review. The Base With Asset Renewal Alternative (BWARA) would cost \$0.9 to \$4 million<sup>87</sup> and eliminate the need to spend hundreds of millions the CHC Project. PSCW staff also found that going ahead and making the Turkey River-Stoneman upgrade without the project would deliver greater congestion and fuel cost savings than 8 of the 11 future scenarios they tested for the CHC Project.

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<sup>86</sup> Klopp-Reply-Exhibit-126, page 37, PSCW Direct-PSC-Vedvik, “The results of Mr. Rohankar’s PowerWorld analysis appear to suggest that the incorporation of forecasted asset renewal projects in the modeling would alleviate the major constraints on the existing transmission system in southwestern Wisconsin.”

<sup>87</sup> The \$4 million figure comes from Klopp-Reply-Exhibit-17 tab, “Avoided Investment Split in the “MTEP17 MVP Triennial Review Business Case,” spreadsheet referenced by MISO in discovery.

To date, wind energy development experts, Michael Goggin and Chad Craven have refused to calculate or speculate upon wind development benefits in Iowa under a Turkey River-Stoneman rebuild scenario.<sup>88</sup>

**Q. Is the Iowa transmission system reliability at risk by not building CHC?**

**A.** No. All of the potential reliability concerns that MISO and Petitioners will commit to in their two lists (31 instability and 26 avoided upgrades) depend on all 17 MVP projects.<sup>89</sup> So the necessity of these 31 instabilities and 26 avoided upgrades is not dependent on a single project like CHC. With 13 or 14 of the MVP projects in service, MISO and the Petitioners decision to not update the reliability lists<sup>90</sup> is difficult to explain. In any case, MISO and the Petitioners are asking the IUB to make a very important decision on the basis of fragmented information. Even if the information was updated, it might only apply to all MVP projects together, not the CHC Project. To meet Iowa statute<sup>91</sup>, regional transmission planning should directly address the proposed Project and be based on the most current, factual data available.

**Q. Are the challenges of connecting more and more power plants to Iowa's grid being correctly portrayed as a reliability shortfall?<sup>92</sup>**

**A.** No. When the addition of a new, large wind power plant in a remote area of Iowa is tested for grid compatibility, it is typical for its output to exceed the transport ability of local distribution and transmission lines under some or many conditions. When a power plant developer states that a "reliability" issue now exists in that area they are putting the cart before the horse. As documented above, all of the existing lines in Iowa are functioning reasonably reliably for local

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<sup>88</sup> Mr Cravens and Mr. Goggin have asked for multiple extensions on discovery. As of 7:30 am on October 31 they have not responded.

<sup>89</sup> The Petitioners make steady practice of committing benefits only to the entire MVP portfolio, not the project which is not before the IUB. For example, Eddy-Direct, page 27 reads, "The CHC Project is part of the MISO MVP Portfolio that is designed to enhance reliability, increase deliverability of renewable energy, and provide strong economic benefits within the MISO footprint."

<sup>90</sup> Klopp-Reply-Exhibit-1, page 20

<sup>91</sup> 478.3(2)b. Petitions for transmission lines capable of operating at thirty-four and one-half kilovolts or more and extending a distance of not less than one mile across privately owned real estate shall also set forth an allegation that the proposed construction represents a reasonable relationship to an overall plan of transmitting electricity in the public interest and substantiation of such allegations, including but not limited to, a showing of the following: (b) The relationship of the proposed project to comprehensive electric utility planning.

<sup>92</sup> Craven-Direct, page 4, "The Cardinal-Hickory Creek Project has been identified as a reliability upgrade in multiple studies as part of the MISO Generation Interconnection Process, meeting the need of generation in MISO West (Iowa, Minnesota, the western part of Wisconsin, North Dakota and South Dakota) and in the eastern part of Wisconsin. "

1 use and have been for up to 75 years. Clearly, the power plant developer is not proposing to  
2 improve what is already reliable? Framing the conversation as reliability is more convincing and  
3 makes it easier for ratepayers to swallow. Even under the purported economic “bargain” of a  
4 large-scale project, it is always more costly to expand a system.

5  
6 **Q. Is there a practical limit to the addition of new power plants that Iowa’s electric grid can**  
7 **feasibly support and, if so, what criteria will determine that limit over time?**

8  
9 **A.** There is a practical limit to the size of anything and economics is almost always the limiting  
10 factor. The extent to which Iowa’s electrical supply can be designed or right-sized to address  
11 climate change, depends on comprehensively understanding grid costs and insisting on  
12 quantified CO2 reduction accountability in every proposal. Is it cost feasible for Iowa to rely  
13 entirely on utility-scale wind power for goals such as 100% renewable energy? No one can  
14 judge until we know what all the costs are. Here are some samples of additional grid costs that  
15 are not being provided by the Petitioners, MISO or supporting expert witnesses:

- 16
- 17 • Wind energy development experts Michael Goggin and Chad Craven found it too  
18 burdensome to list all of the new power plants they believe will benefit from the CHC  
19 Project and provide estimates of the distribution and transmission upgrade costs required  
20 to connect each of them to the grid.
  - 21
  - 22 • Ratepayers are accustomed to paying for small footprint power plants that last 40 to 75  
23 years. How much additional acreage is required in Iowa for the necessary number of  
24 wind turbines?
  - 25
  - 26 • What is a turbine’s the expected lifespan?
  - 27
  - 28 • Iowa is known for wind turbines but also has a stockpile of fossil fuel generators to retire.  
29 How feasible are the costs and land impacts for running Iowa on 100% wind energy +  
30 storage by 2050?
  - 31
  - 32 • How many additional turbines would be required if energy use grows at 2% per year?  
33 How many additional turbines would be required if energy use declines at 2% per year?  
34 Both directions are possible.

- Iowa seeks a reputation as a wind energy exporter. How feasible are the costs and land impacts for Iowa setting a 100% renewable energy + storage standard by 2050 and exporting 25% (or 50% more power) to other states?

- What is the cost of the transmission lines needed in other states for Iowa to aspire to 100% renewable energy + 50% extra for export? Will the power have a market or will other states decide to also become 100% energy self-sufficient?

Perhaps wind turbines are not the answer to 100% renewable energy goals. Right now we are doing piecemeal planning without CO2 reduction accountability.

**Q. Do the aging transmission lines in Iowa's grid have a role to play in comprehensive efforts to keep the cost of CO2 reduction down.?**

**A.** Yes, a central one, if cost effective CO2 emissions are the central paradigm in grid rightsizing. As cited before, the lowest-cost, fastest way to cut CO2 emissions is Non-Transmission Alternatives (NTA's). These resources range from instruction on conservation skills, improved dwelling and appliance/equipment efficiencies, real time load management monitoring, home/local solar, solar with battery storage, interlinked distributed battery storage capacity, municipal solar plus storage to full-fledged micro grids. The lowest cost way to pay for these improvements is to deploy them to key locations to lower local load. NTA's are motivated by these additional financial incentives:

- Coordinated reduction of local usage allows more economic power transfer through the local substation.
- Interconnection costs for new remote generation, municipal solar+storage is considerably less costly when tied to the rebuilding older transmission facilities.
- Transmission line carrying capability is often doubled when they are rebuilt.
- If lines are already properly sized, the lifespan of expensive components like

transformers can be significantly prolonged, saving millions.

- Savings from avoided retail energy use are 4 to 6 times greater than developing utility scale renewables.
- Providing emergency back-up power from solar+storage whether on the homes, businesses or on the municipal level.
- With the participation of third parties, Dairyland Power Cooperative has deployed about 15 NTA solar facilities near substations. Between now and 2029, ITC-Midwest has entered into a commitment with the IUB<sup>93</sup> to rebuild, reassign and convert some 34.5 kV distribution systems into 69 kV lines.

## V. ANALYSIS OF ALTERNATIVES

### **Q. Does the Public Interest require the Analysis and Comparison of Alternatives?**

**A.** Iowa Code 2019 Section § 478.3(2) states “the proposed construction represents a reasonable relationship to an overall plan of transmitting electricity in the public interest” and “The possible use of alternative routes and methods of supply.” I submit that, the Petitioners proposal does not represent a relationship to an overall plan, because they have not developed and considered alternatives, provided quantitative economic analysis or quantitative analysis of other aspects of the project that underlie their argument for project need, like reliability, carbon emission reduction, and considerations therein.

### **Q. Did the Petitioners Develop, Analyze and Compare Alternatives to the Project for this Proceeding?**

**A.** No. The Petitioners sole reference to alternatives can be found in Mr. Eddy’s Direct,<sup>94</sup> where he states “The non-transmission and/or low voltage alternatives were considered as part of the Wisconsin regulatory proceedings. The non-transmission alternative was considered unrealistic and the low voltage alternative was uneconomic.” I would like to point out that this

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<sup>93</sup> Klopp-Reply-Exhibit-160, page 124

<sup>94</sup> ITC Midwest Eddy Direct Page 28 of 30

statement does not qualify as development and consideration of alternatives in a manner that would serve to inform the IUB. There is no evidence presented to support that the Petitioners conclusion was accurate and based in fact. There is no opportunity for parties to this proceeding to review the information in an open forum as part of this proceeding. And there is no allowance for the Iowa Public or the members of the IUB to evaluate the information first hand.

As a result of rapidly evolving generation technologies, storage options and methods for energy efficiency, the possibilities for energy planning solutions have exploded. Now, more than ever, examination of alternatives is essential to determining what direction best meets the Public Interest. Concrete evidence is crucial to establishing that expensive utility infrastructure projects (that saddle the Public with long-term debt) are truly better, more economical and meet Public goals for carbon reduction.<sup>95</sup>

**Q. What Evidence is Available on Alternatives to the Project to Inform this Proceeding?**

**A.** Because the Petitioners did not see fit to provide an analysis and comparison of alternatives for review, I would like to contest their conclusions on alternative solutions to this project. If consideration of alternatives had been taken on seriously and scientifically, there are likely numerous possible alternatives that rival the project economically, providing for reliability and in meeting carbon reduction goals. I will present those alternatives that were considered as part of the Wisconsin regulatory proceedings. A summary of the details of those alternatives can be found in Intervenor Klopp's Initial Brief, pages 11-17<sup>96</sup>.

**Low Voltage Alternatives**

I would like to start with Mr. Eddy's assertion that "the low voltage alternative was uneconomic." In any complex system, there is more than one way to use a basic concept to design a solution. The low voltage alternative that Mr. Eddy refers to in his statement is one that the Applicants designed and included in their application to the PSCW. The choices the Applicants made in designing this alternative determine its fitness. It is not in the material interests of the Applicants to design a low voltage alternative that eliminates the need for a High Voltage Transmission Line project (HVTL). What were the main problems with the design of the

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<sup>95</sup> Klopp-Reply-Exhibit-125 at pp. 11-17

<sup>96</sup> Klopp-Reply-Exhibit 125, Initial Brief-Klopp-11-17

Applicants LV option that caused it to be expensive?

To illustrate how a thoughtful and insightful strategy for designing a low voltage option can provide a completely different result, I would like to introduce BWARA. BWARA is the “Base with Asset Renewal Alternative” designed by the PSCW engineering staff. Upon review of the reliability projects slated as part of the CHC project, PSCW staff realized that resolving three projected transmission line overloads, that would be addressed by the project, provides the capacity needed to clear up congestion (claimed as one of the main problems/need for CHC) at a fraction of the cost.

“Rebuilding these circuits with the higher MVA rating would more than double the capacity of the existing river crossing and alleviate the projected overloads and NERC planning violations across these lines.”<sup>97</sup> The cost of the BWARA alternative is \$897,474.<sup>98</sup> Since the majority of the asset renewals take place in the Wisconsin portion of the project, the cost to Iowa would be negligible (particularly in comparison to the cost of the proposed project). The BWARA upgrades enable export of excess Iowa wind generation along the existing transmission system. Using the CBM methodology, the base with asset renewal produced gross energy cost savings to Wisconsin transmission customers of approximately \$2.02 million. Using the APC methodology, the base with asset renewal produced gross energy cost savings to Wisconsin transmission customers of approximately \$18.94 million.<sup>99</sup>

## **Non-Transmission Alternatives**

Mr. Eddy portrays the non-transmission alternative (NTA) as unrealistic. Once again, the NTA alternative that Mr. Eddy refers to in his statement is one that the Applicants designed. The same considerations apply relative to the incentive for the Applicants to design an NTA that outperformed their HVTL project. The original NTA considered by the Applicants was a beleaguered option designed by an engineer who was not qualified to design a modern optimized NTA.<sup>100</sup> According to DALC/WWF expert, Ms. Cusick “However, the Applicants assigned the

<sup>97</sup> Klopp-Reply-Exhibit-126, page 15

<sup>98</sup> Klopp-Reply-Exhibit-150, page 10 Klopp-Reply-Exhibit-159, page 3

<sup>99</sup> Klopp-Reply-Exhibit-150, page 10

<sup>100</sup> Klopp-Reply-Exhibit-158, page 444

task of developing their NTA solution to team members who, based on their own admission, have no experience developing high priority energy resource solutions.<sup>101</sup> As the Wisconsin proceeding progressed, the Applicants hired an outside consultant to design, in part, an optimized NTA, in response to Intervenor testimony. The Applicants consultant, Mr. Chao from Quanta, designed an NTA under both time and project constraints. Upon completion of the essential elements of NTA design that Mr. Chao's was contracted to do, he concluded, based on a preliminary analysis, that a non- transmission alternative solution can provide near-identical functionality as the Cardinal Hickory Creek 345 kV transmission line at a significantly lower cost than the Applicant's proposed solution. ATC's engineer, Mr. Dagenais' appraisal of Mr. Chao's NTA solution was that it still is not cost effective.<sup>102</sup>

Intervenors in the Wisconsin proceeding engaged expert witnesses to discuss NTA attributes and in one case, design two fully optimized NTA project alternatives. SOUL of Wisconsin's expert witness, Bill Powers presented two possible alternatives based on \$67 million (equal to the cost shared amount Wisconsin would pay for the CHC project under the most conservative cost estimates) and \$177 million budgets.<sup>103</sup> "When combined with a conservative, estimated increase in transfer capability from BWARA line upgrades, Mr. Powers' Optimized \$177 million NTA is estimated to reduce more CO2 emissions over 40 years than the Project under the Applicants' favored PR future scenarios."<sup>104</sup>

**Q. Are there other Alternatives that provide Carbon Reduction?**

**A.** According to the US EIA, energy efficiency is responsible for 50% of carbon reduction. Encouraging the Public to participate in these benefits by increasing Focus on Energy incentives has been proven to be effective and economical. Combining energy efficiency with progressive legislation that empowers citizens to invest in residential, commercial and community distributed solar, feeding excess generation into the distribution system is a win-win for both the environment and the Public Interest.

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<sup>101</sup> Klopp-Reply-Exhibit-157, page 2-3

<sup>102</sup> Klopp-Reply-Exhibit-156, page 37

<sup>103</sup> Klopp-Reply-Exhibit-155, page 25-31

<sup>104</sup> Klopp-Reply-Exhibit-161, page 9

**VIII. CONCLUSION**

I oppose the project and ask the IUB deny the Petition filing for Franchise to erect, maintain, and operate an electric transmission line on all of the reasons below.

The Petitioners have not established a need for the project. They have relied on MISO documentation for the entire MTEP17 Portfolio of MVP Projects. As a result, there is no project specific documentation or analysis on important topics such as the economics of the project, environmental goals (CO2 emission reductions), reliability or examination and comparison to alternatives. There has been no third party (objective) analysis of these project attributes. And the statements made by the Petitioners and their supporters, regarding the project are broad generalizations and frequently misleading at best.

Current trends in growth of demand are low and insignificant in comparison to available generation, to substantiate a need for additional transmission, costing ratepayers millions. Ongoing investment in transmission has resulted in ever increasing electric rates and will likely lead to stranded assets. Ratepayers will continue to pay for these stranded assets.

There has been no analysis of economics for the project, based on data, to show that it will produce significant benefits to ratepayers. Evidence on economic performance from the Wisconsin CHC proceeding reveal the strong likelihood that the project will incur costs to ratepayers, not benefits.

There has been no analysis of CO2 emission reductions for the project, based on data, to show that desired reductions will be met. Evidence regarding CO2 emission reductions from the Wisconsin CHC proceeding do not support the project as beneficial in this regard, especially in comparison to the potential of alternatives.

Alternatives to the project have not been developed and compared. Development and comparison to alternatives was presented in the Wisconsin CHC proceeding. This evidence demonstrated that there are reasonable alternatives to the project and specifically one that

1 highlights how good energy planning can be economical. The alternative to which I am referring  
2 is BWARA, an asset renewal alternative designed by PSCW staff costing roughly \$900,000, a  
3 fraction of the CHC project cost.

4  
5 The project is likely to encourages expensive overgrowth of wind generation (becoming  
6 increasingly unpopular with the Public).

7  
8 The project would result in a host of negative impacts to landowners and communities.  
9 Alternatives to the project do not carry these negative impacts.

10  
11 **Q. Do you have anything else you would like to add to your reply testimony?**

12 **A. No.**

13 **Q. Does this conclude your reply testimony?**

14 **A. Yes**

15  
16  
17 **Respectfully Submitted on November 4, 2019**

18 ***/S/ Chris Klopp***

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